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US SPENT FUEL TEAM

CHRON

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DATE: FRIDAY, NOVEMBER 24, 1995

(HOLIDAY--ENHANCEMENT OF YESTERDAY'S REPORT)

Engineer Li began the morning meeting by informing us that the purification line was stopped at 7:30 am due to erratic behavior of the flow controller. When DPRK drained the air compressor this morning, the drain plug apparently did not properly reseal, resulting in a loss of pressure. John and Al quickly solved the problem by using the drain plug from one of the spare compressors. However, when we restarted the pump, we found that flow through Chiller B was blocked--apparently frozen.

John and Al put a plug (3/8 inch stainless steel) on the drain line in Chiller A that failed yesterday, and, at about 11:00 am, restarted the purification line with flow through Chiller A. John and Al recommend that a new plastic drain plug be ordered since this provides pressure release in the event of freezing.

In the early afternoon, the blockage in Chiller B suddenly cleared--apparently confirming our assumption of a frozen line. Flow through Chiller B was re-established. We instructed DPRK to leave all chillers off until further notice. The water is already cold (42 F), and we have encountered two freezing problems in the last two days. System status: flow at set point of 55 gpm, all filter units in except pre-filter Bank B and the cesium unit.

George planned to install a cable from NAC's distribution panel, located in the spent fuel pool room, to a distribution panel in the office. The available cable was too short and too big (OD=1"); he needs a 200 foot cable capable of carrying 30 amps at 110 volts.

John and Al spent the last few hours of the afternoon calibrating the NaI counter system. It is planned that an accurate cesium concentration will be available in a few days.

At our request, Engineer Li checked on the status of visas. He was told that the spent fuel team is being granted all visas without delay, and that visas for Grim, Von Neida, and Flournoy will be available on schedule. He also promised to check again.

We spent about 2 hours in the afternoon discussing the proposed new sludge system with engineer Li. The enclosed diagram shows the system as I understand it from Dick Libby, and as I presented it to engineer Li. Engineer Li offered sound and constructive advice. His major points are listed on the next page.

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* One or two tall tanks in the pool sounds reasonable. (Note: Do they need to be tanks, or just fitted cylindrical sectors? Short sectors would be easier to ship).

* Location of the pump suspended from the edge of the pool or on a slanted tray appears reasonable.

* He thought that we should remove the old system from the pool. Related to this, he emphasized that we must minimise the quantity of contaminated equipment, and that we cannot permit this new system to fail--resulting in more lost time and additional contaminated equipment, not to speak of complete loss of confidence in our entire operation.

* I proposed three alternatives for the disposition of the final sludge in the bottom of the settling tanks:

    1) Filter bags,
    2) Condensed sludge (e.g., barrels)
    3) Dry, condensed waste.

In response, he said that we should adhere to two principles:

    1) Minimize waste volume, and
    2) Avoid spread of radioactivity.

Thus, he very much liked the possibilities offered by Options 2 or 3 above. He cautioned that if drying of waste involved vaporization (which it does), then he would be concerned by the potential spread of radioactivity. However, if we have the appropriate filters, then drying may be acceptable. Again, his strong preference is for Options 2 or 3 above, and that it was our choice between these two.

* He would like it made clear that we (US) would be responsible for the transformation of the waste in the bottom of the settling tanks into a final form (e.g., bags, barrels).

* He would like an estimated date as to when we might have a new system here. He stressed that the fuel elements continue to corrode.

In summary, he seems to like the new system in concept, but stressed that it has got to work this time.

While we are re-evaluating, and perhaps replacing the sludge removal system, I wish to repeat the advice that I have given to Dick Libby. That is, that we should talk to BNFL and COGEMA to see whether they have a suitable system, or, at the least, get their evaluation of the new system that we are considering.